

the target satellite and the axis of the main lobe of the ESV antenna exceeds the declared maximum antenna pointing error, and will not resume transmissions until the angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna is less than or equal to the declared maximum antenna pointing error.

(2) An ESV applicant proposing to implement a transmitter under paragraph (a)(2) of this section and using off-axis EIRP spectral-densities in excess of the levels in paragraph (a)(1)(i) of this section shall provide the following certifications and demonstration as exhibits to its earth station application:

(i) A statement from the target satellite operator certifying that the proposed operation of the ESV has the potential to create harmful interference to satellite networks adjacent to the target satellite(s) that may be unacceptable.

(ii) A statement from the target satellite operator certifying that the power-density levels that the ESV applicant provided to the target satellite operator are consistent with the existing coordination agreements between its satellite(s) and the adjacent satellite systems within 6° of orbital separation from its satellite(s).

(iii) A statement from the target satellite operator certifying that it will include the power-density levels of the ESV applicant in all future coordination agreements.

(iv) A demonstration from the ESV operator that the ESV system is capable of detecting and automatically ceasing emissions within 100 milliseconds when the transmitter exceeds the off-axis EIRP spectral-densities supplied to the target satellite operator.

(3) There shall be an exhibit included with the application describing the geographic area(s) in which the ESVs will operate.

(4) The point of contact referred to in paragraph (a)(3) of this section and, if applicable paragraph (a)(6) of this section, must be included in the application.

(5) ESVs that exceed the radiation guidelines of §1.1310 of this chapter,

Radiofrequency radiation exposure limits, must provide, with their environmental assessment, a plan for mitigation of radiation exposure to the extent required to meet those guidelines.

(c) Operations of ESVs in the 14.0–14.2 GHz (Earth-to-space) frequency band within 125 km of the NASA TDRSS facilities on Guam (located at latitude: 13°36'55" N, longitude 144°51'22" E) or White Sands, New Mexico (latitude: 32°20'59" N, longitude 106°36'31" W and latitude: 32°32'40" N, longitude 106°36'48" W) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC). When NTIA seeks to provide similar protection to future TDRSS sites that have been coordinated through the IRAC Frequency Assignment Subcommittee process, NTIA will notify the Commission that the site is nearing operational status. Upon public notice from the Commission, all Ku-band ESV operators must cease operations in the 14.0–14.2 GHz band within 125 km of the new TDRSS site until after NTIA/IRAC coordination for the new TDRSS facility is complete. ESV operations will then again be permitted to operate in the 14.0–14.2 GHz band within 125 km of the new TDRSS site, subject to any operational constraints developed in the coordination process.

(d) Operations of ESVs in the 14.47–14.5 GHz (Earth-to-space) frequency band within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (latitude 17°46' N, longitude 64°35' W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (at latitude 19°48' N, longitude 155°28' W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (latitude 18°20'46" W, longitude 66°45'11" N) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC).

[74 FR 47105, Sept. 15, 2009]

§ 25.223 Off-axis EIRP spectral density limits for feeder link earth stations in the 17/24 GHz BSS.

(a) This section applies to all applications for earth station licenses in the 17/24 GHz BSS frequency bands, except for applications in which the proposed

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antenna does not conform to the standards of §§25.209(a) and (b), and/or the proposed power density levels are in excess of those specified in §25.212(f) of this part.

(b) All applications for earth station licenses in the 24.75–25.25 GHz portion of 17/24 GHz BSS shall be routinely

processed if they meet the following requirements:

(1) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for co-polarized signals shall not exceed the following values, within $\pm 3^\circ$ of the GSO arc, under clear sky conditions:

32.5–25log(θ)	dBW/MHz	for $2^\circ \leq \theta \leq 7^\circ$
11.4	dBW/MHz	for $7^\circ \leq \theta \leq 9.2^\circ$
35.5–25log(θ)	dBW/MHz	for $9.2^\circ \leq \theta \leq 48^\circ$
3.5	dBW/MHz	for $48^\circ \leq \theta \leq 180^\circ$

Where θ is the angle in degrees from the axis of the main lobe.

(2) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density

for co-polarized signals shall not exceed the following values, for all directions other than within $\pm 3^\circ$ of the GSO arc, under clear sky conditions:

35.5–25log(θ)	dBW/MHz	for $2^\circ \leq \theta \leq 7^\circ$
14.4	dBW/MHz	for $7^\circ \leq \theta \leq 9.2^\circ$
38.5–25log(θ)	dBW/MHz	for $9.2^\circ \leq \theta \leq 48^\circ$
6.5	dBW/MHz	for $48^\circ \leq \theta \leq 180^\circ$

Where θ is the angle in degrees from the axis of the main lobe.

(3) The values given in paragraphs (b) (1) and (2) of this section may be exceeded by 3 dB, for values of $\theta > 10^\circ$, provided that the total angular range over which this occurs does not exceed

20° when measured along both sides of the GSO arc.

(4) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for cross-polarized signals shall not exceed the following values, in all directions greater than $\pm 3^\circ$ relative to the GSO arc, under clear sky conditions:

22.5–25log(θ)	dBW/MHz	for $2^\circ \leq \theta \leq 7^\circ$
1.4	dBW/MHz	for $7^\circ \leq \theta \leq 9.2^\circ$

Where θ is the angle in degrees from the axis of the main lobe.

(c) Notwithstanding §25.220 of this part, each applicant for earth station license(s) that proposes levels in excess of those defined in paragraph (b) of this section shall:

(1) Submit link budget analyses of the operations proposed along with a detailed written explanation of how each uplink and each transmitted satellite carrier density figure is derived;

(2) Submit a narrative summary which must indicate whether there are margin shortfalls in any of the current baseline services as a result of the addition of the applicant's higher power service, and if so, how the applicant in-

tends to resolve those margin short falls;

(3) Certify that all potentially affected parties acknowledge and do not object to the use of the applicant's higher power densities. For proposed power levels less than or equal to 3 dB in excess of the limits defined above, the affected parties shall be those co-frequency U.S. licensed 17/24 GHz BSS satellite networks that are located at angular separations of up to $\pm 6^\circ$ away; for power levels greater than 3 dB and less than or equal to 6 dB in excess of the limits defined above, affected parties shall be all those co-frequency U.S. licensed operators at up to $\pm 10^\circ$ away. No power levels greater than 6 dB in

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excess of the limits defined above shall be permitted.

(d) Licensees authorized pursuant to paragraph (c) of this section shall bear the burden of coordinating with any future applicants or licensees whose proposed compliant operations at 10 degrees or smaller orbital spacing, as defined by paragraph (b) of this section, is potentially or actually adversely affected by the operation of the non-compliant licensee. If no good faith agreement can be reached, however, the non-compliant licensee shall reduce its earth station EIRP spectral density levels to be compliant with those specified in paragraph (b) of this section.

(e) For earth stations employing uplink power control, the values in paragraphs (b) (1), (2), and (4) of this section may be exceeded by up to 20 dB under conditions of uplink fading due to precipitation. The amount of such increase in excess of the actual amount of monitored excess attenuation over clear sky propagation conditions shall

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not exceed 1.5 dB or 15% of the actual amount of monitored excess attenuation in dB, whichever is larger, with a confidence level of 90 percent except over transient periods accounting for no more than 0.5% of the time during which the excess is no more than 4.0 dB.

[72 FR 50030, Aug. 29, 2007]

§ 25.224 Protection of receive-only earth stations in the 17/24 GHz BSS.

(a) Notwithstanding § 25.209(c) of this part, receive-only earth stations operating in the 17/24 GHz broadcasting-satellite service can claim no greater protection from interference than they would receive if the equivalent antenna diameter were equal to or greater than 45 cm and the antenna meets the co-polar and cross-polar performance patterns represented by the following set of formulas (adopted in Recommendation ITU-R BO.1213-1, dated November 2005) that are valid for $D/\lambda \geq 11$: